Classé

CA-201

POWER AMPLIFIER

SERVICE MANUAL

v 1.0

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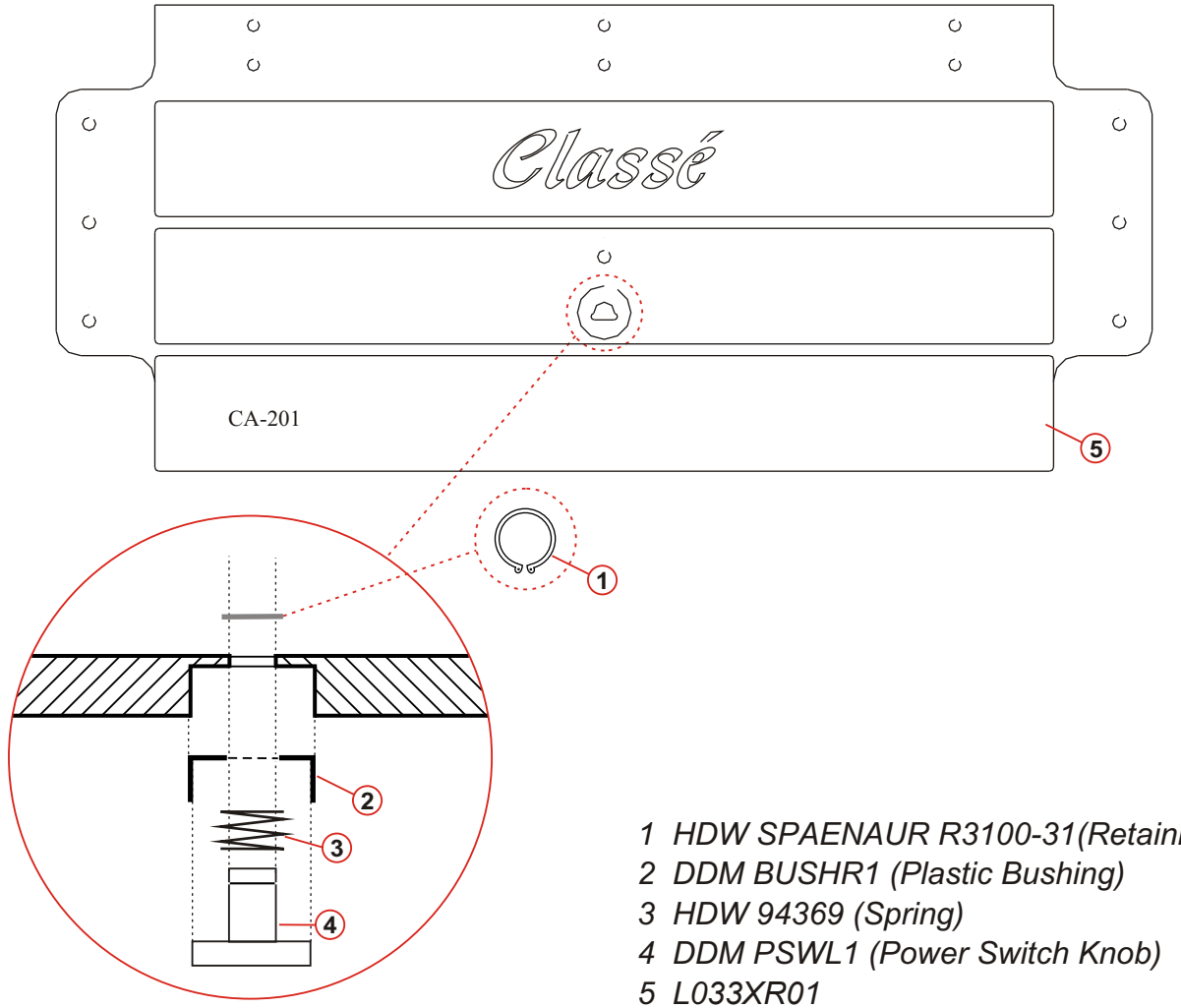
CA-201

MECHANICAL ASSEMBLY

FACE PLATE ASSEMBLY

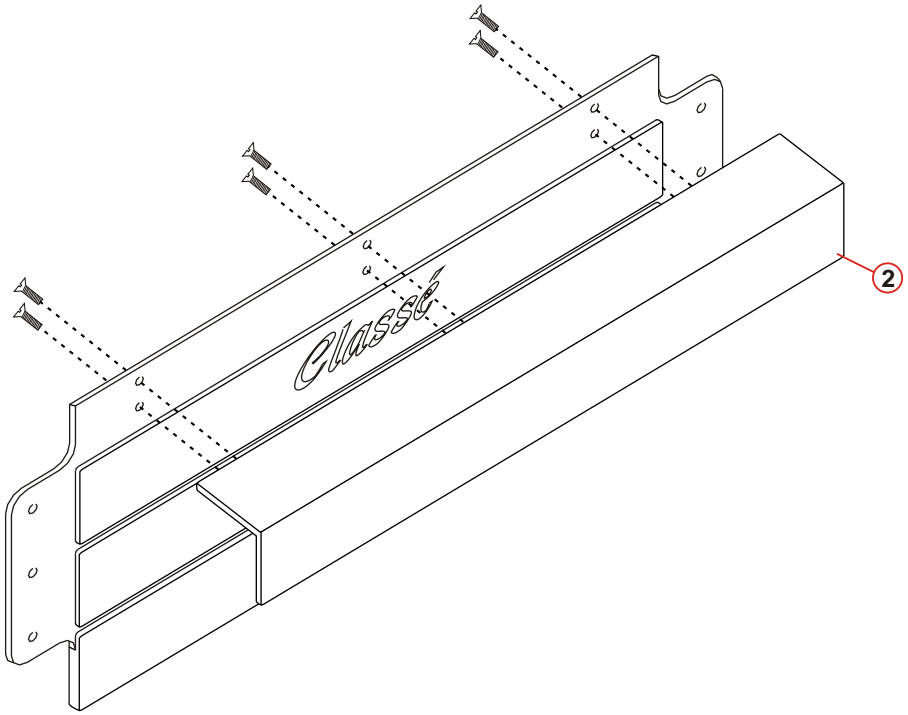
CA-201

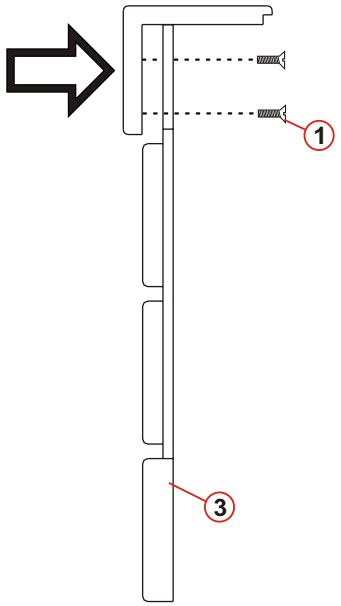


1 HDW SPAENAUR R3100-31(Retaining Ring)
2 DDM BUSHR1 (Plastic Bushing)
3 HDW 94369 (Spring)
4 DDM PSWL1 (Power Switch Knob)
5 L033XR01

FACE PLATE ASSEMBLY

CA-201



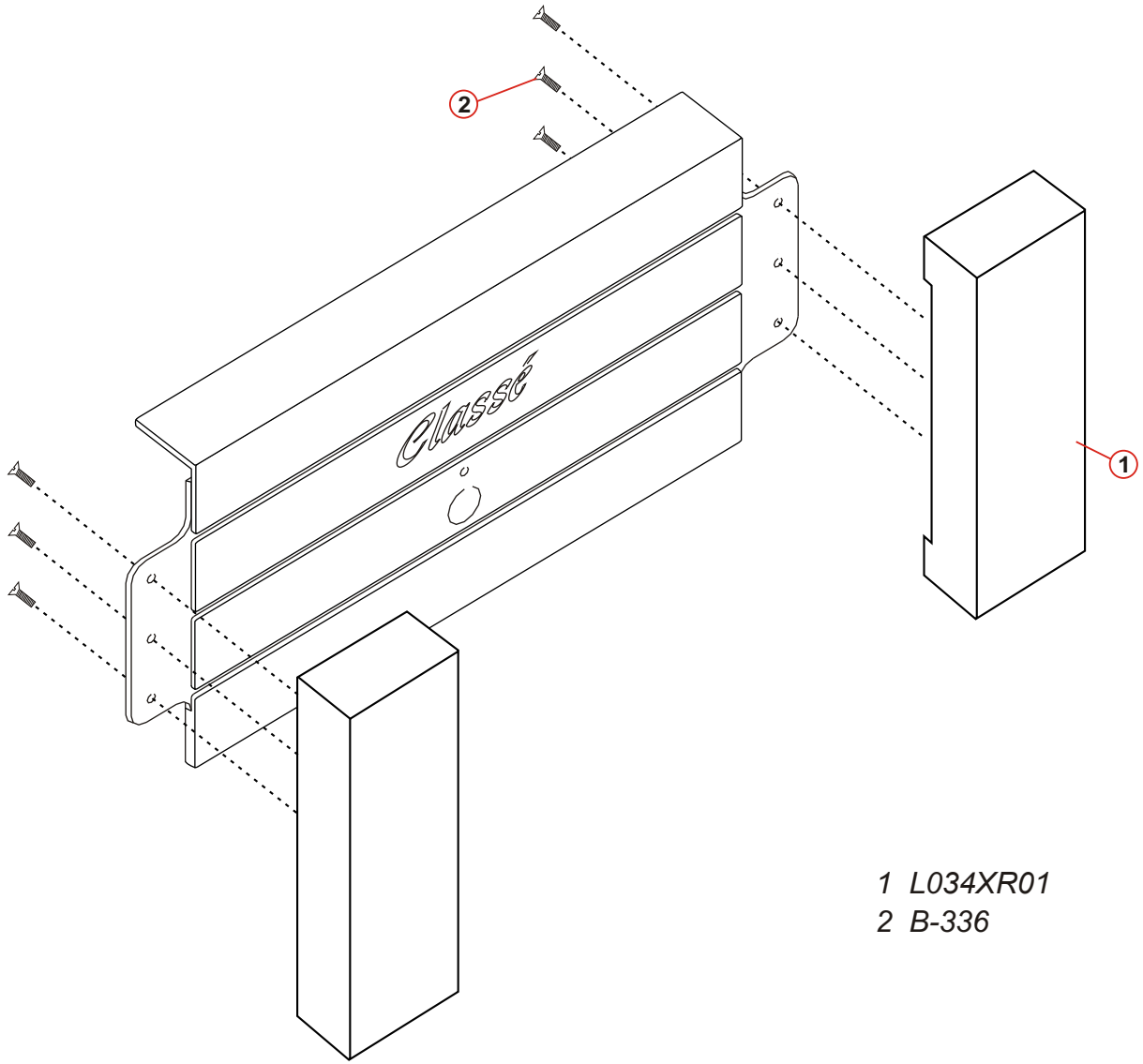


SIDE VIEW

1 MPFU-0804
2 L02CXR02
3 L033XR01

FACE PLATE ASSEMBLY

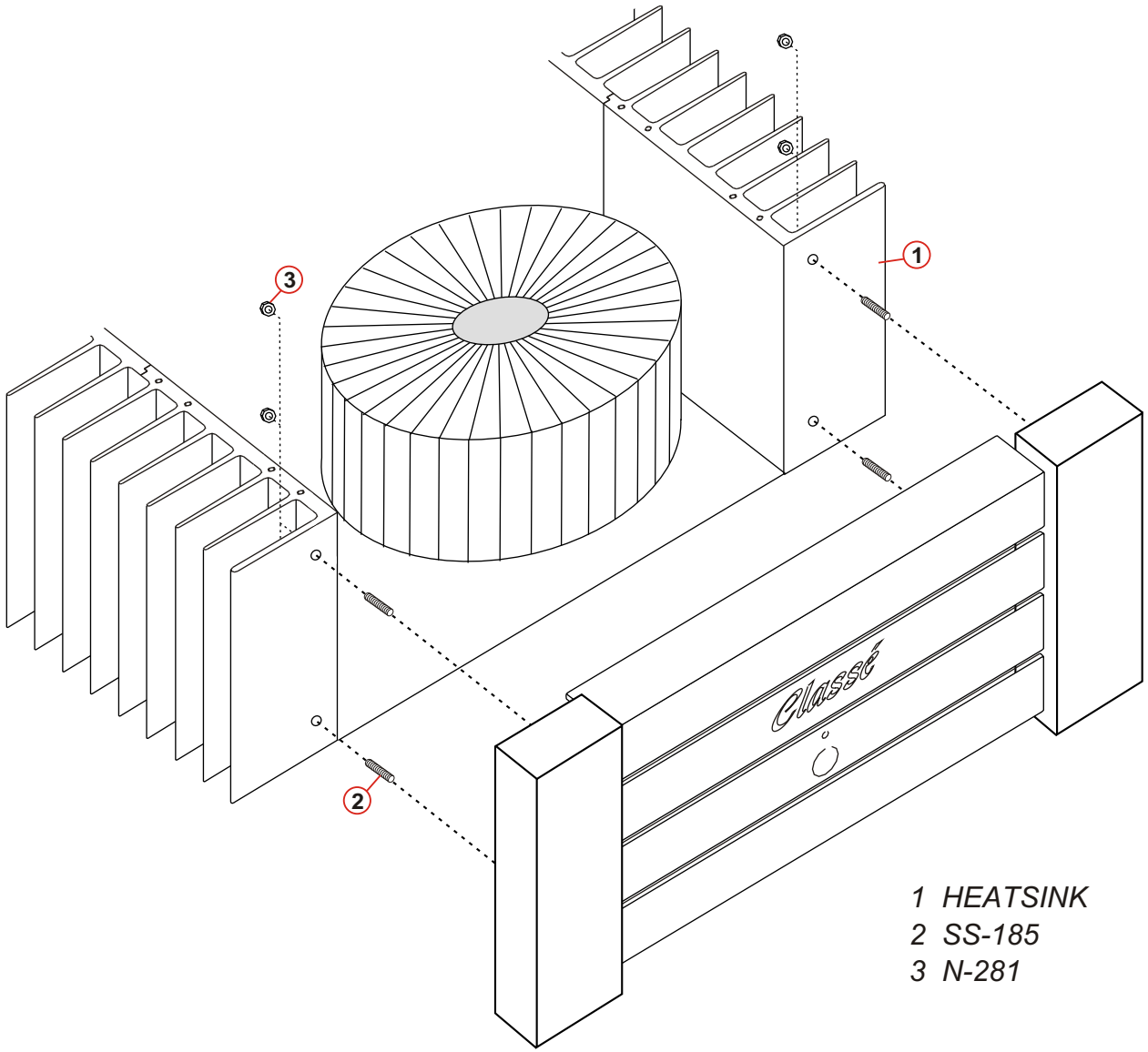
CA-201



1 L034XR01
2 B-336

FACE PLATE ASSEMBLY

CA-201



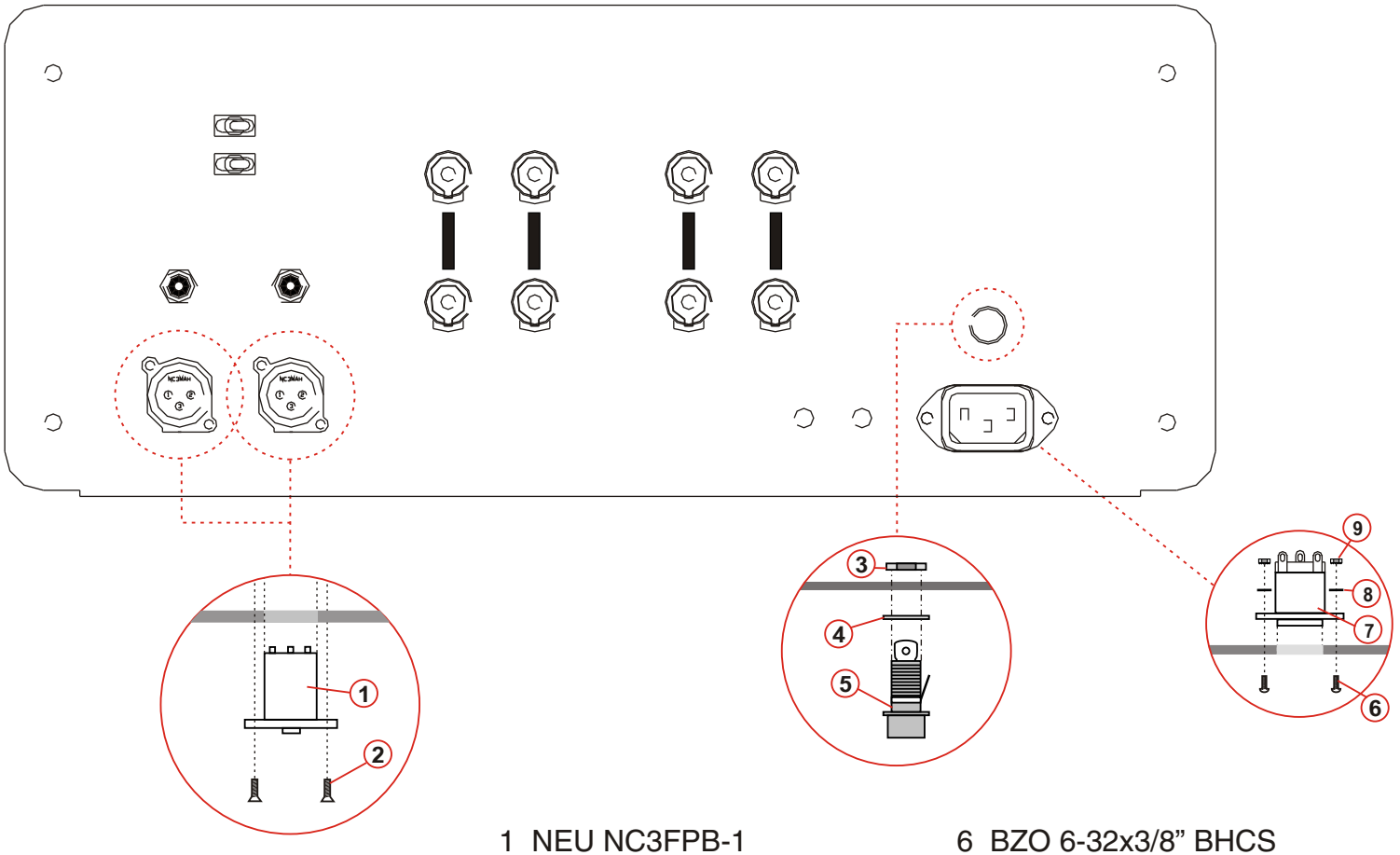
1 HEATSINK
2 SS-185
3 N-281

SIDE VIEW

1 8-32X1/2 BHCS
2 L031XR07

CHASSIS REAR VIEW

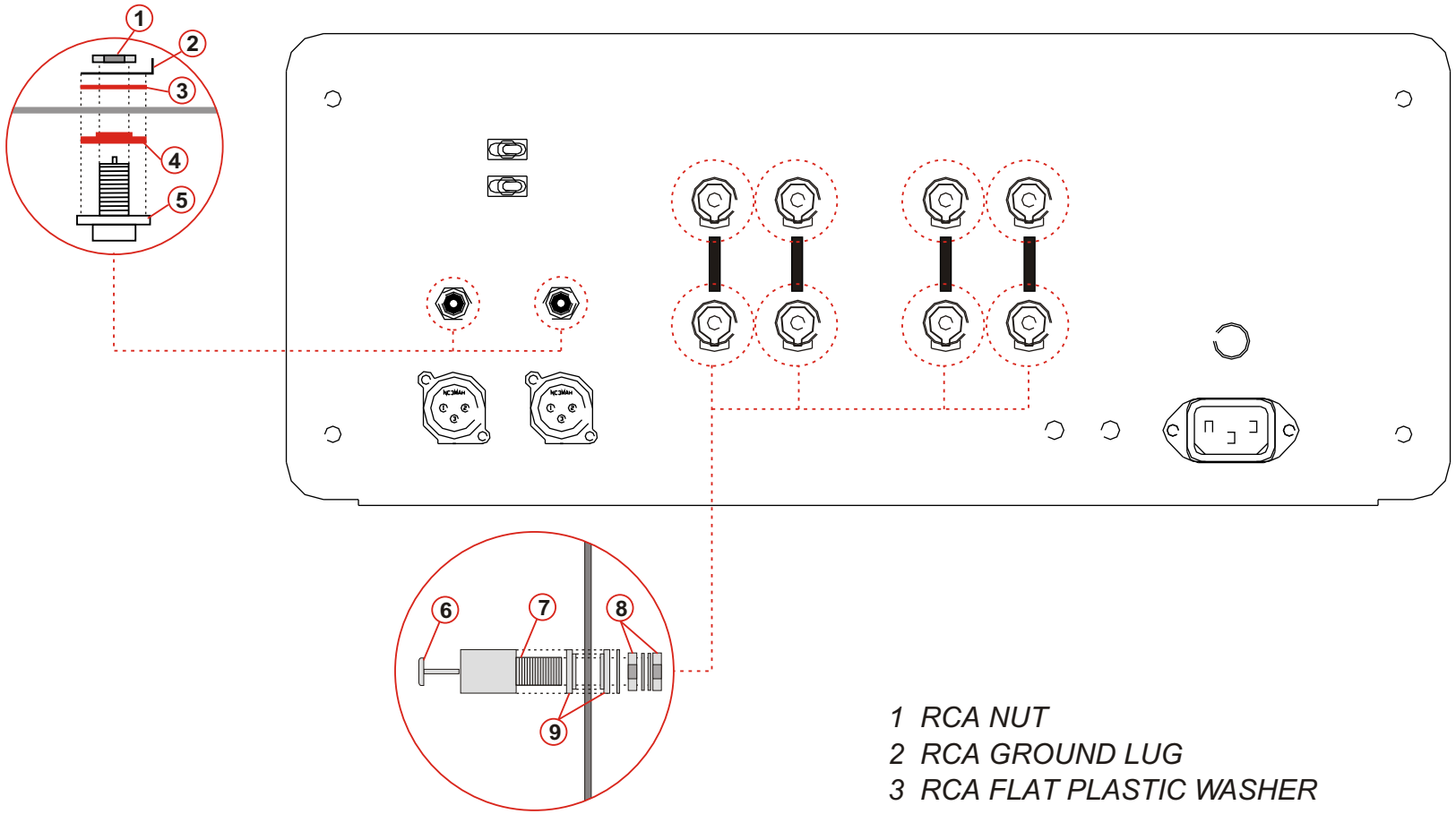
CA-201



1 NEU NC3FPB-1
2 BZO 4-40x3/8” FHCS
3 FUSE PLASTIC NUT
4 FUSE RUBBER GASKET
5 FUSE HOLDER
6 BZO 6-32x3/8” BHCS
7 SWI EAC-310
8 HDW #6 LK WASHER
9 HDW 6-32 NUT

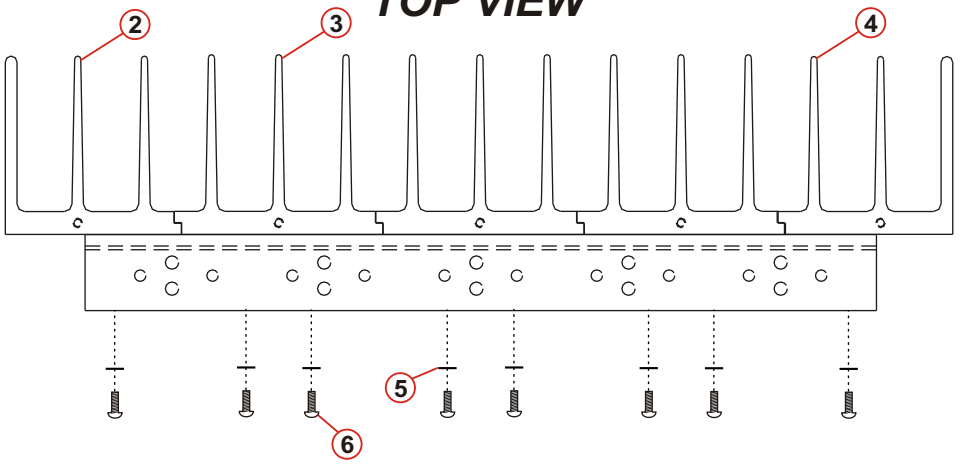
CHASSIS REAR VIEW

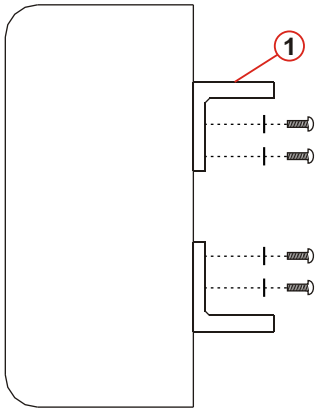
CA-201



1 RCA NUT
2 RCA GROUND LUG
3 RCA FLAT PLASTIC WASHER
4 RCA SHOULDER PLASTIC WASHER
5 A/D AD3505FP (RCA jack)
6 BINDING POST
7 B. POST SPACER
8 B. POST WASHER
9 B. POST NUTS

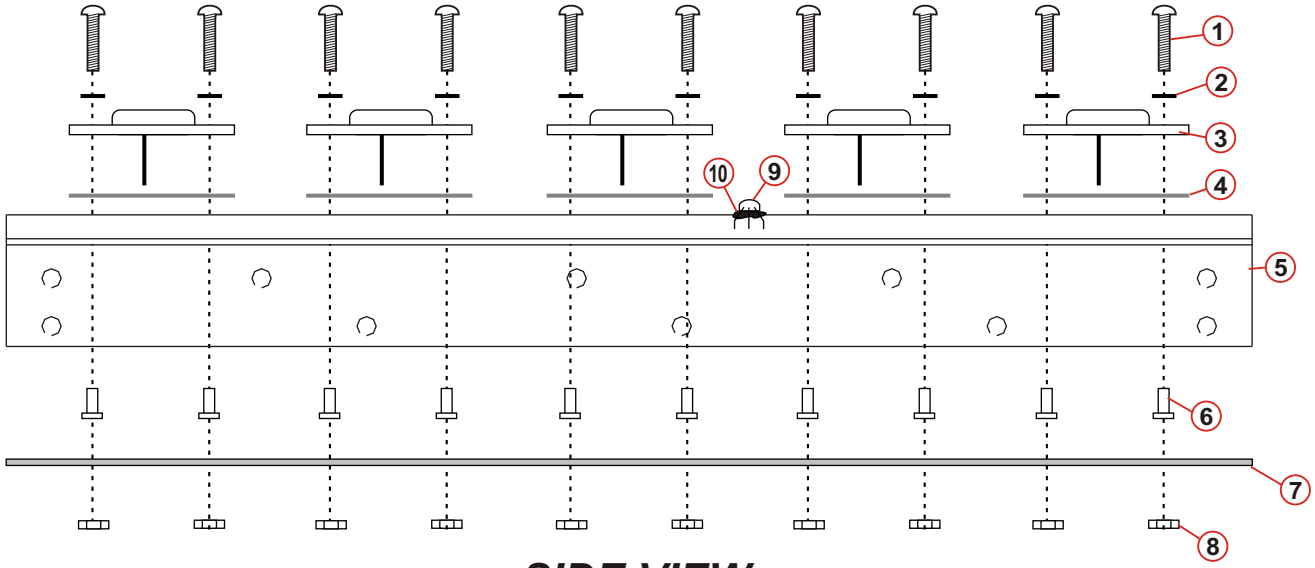
TOP VIEW



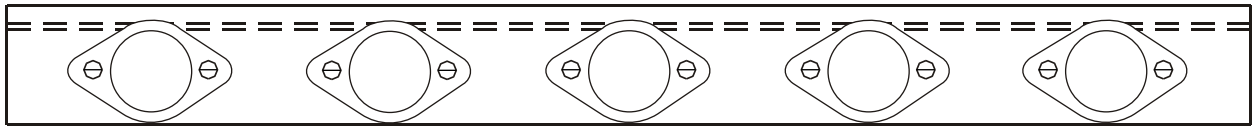


FRONT VIEW

1 L038XR02
2 L036XR01
3 L037XR03
4 L036XR01
5 1740.
6 10-32X1/2 BHCS



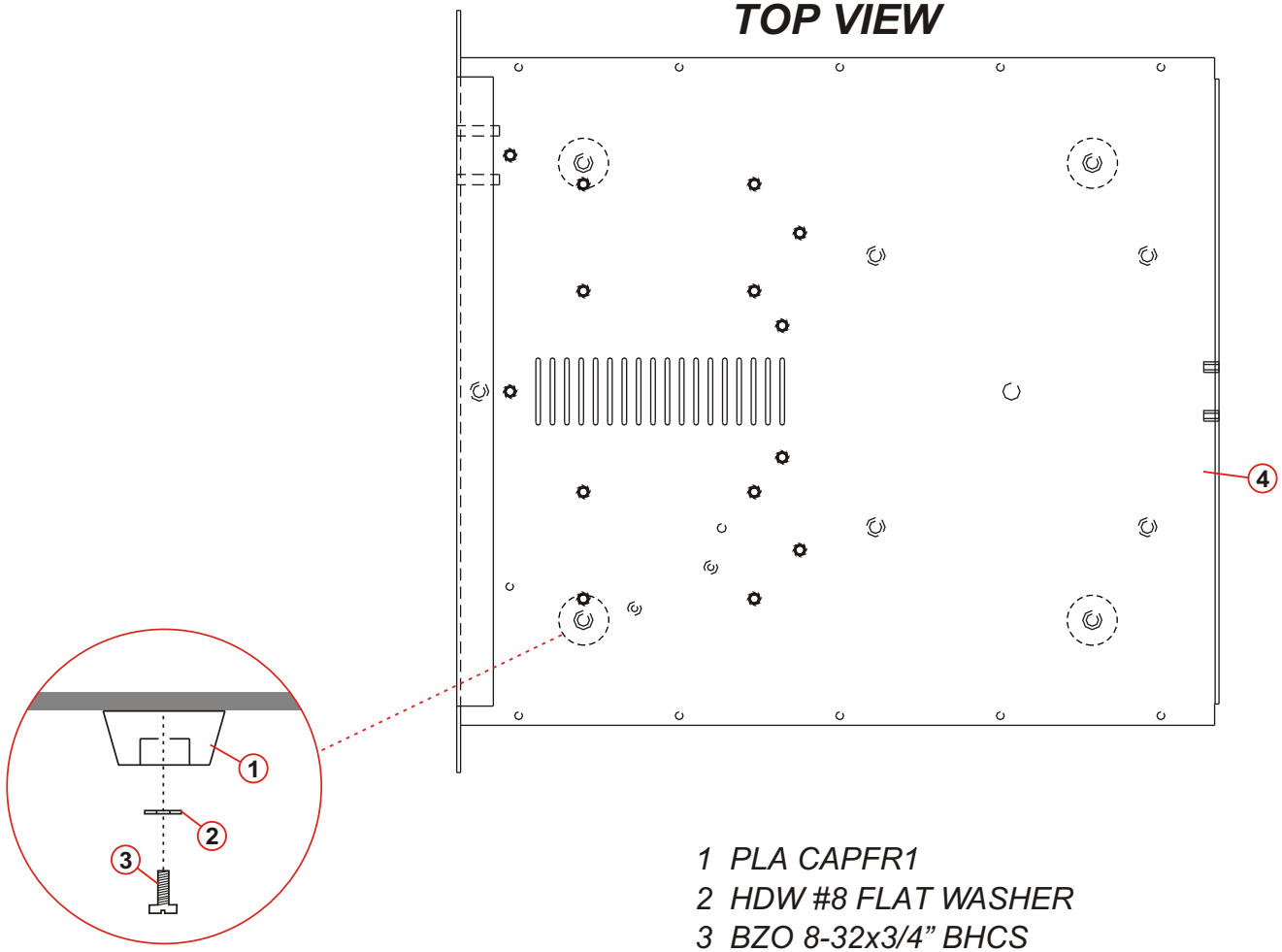
SIDE VIEW



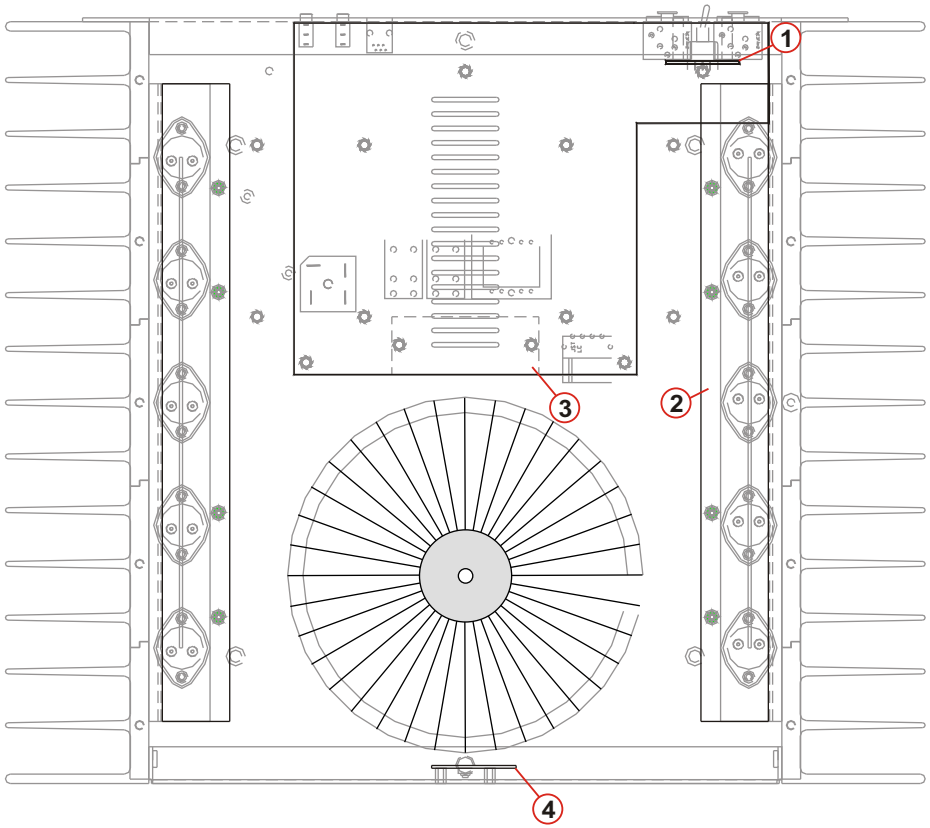
TOP VIEW

1 MS-2147
2 W-311
3 TRANSISTOR
4 K4-04
5 L038XR02
6 3104.
7 B032XR05
8 727.
9 MPS2222
10 DELTA BOND (blue glue)

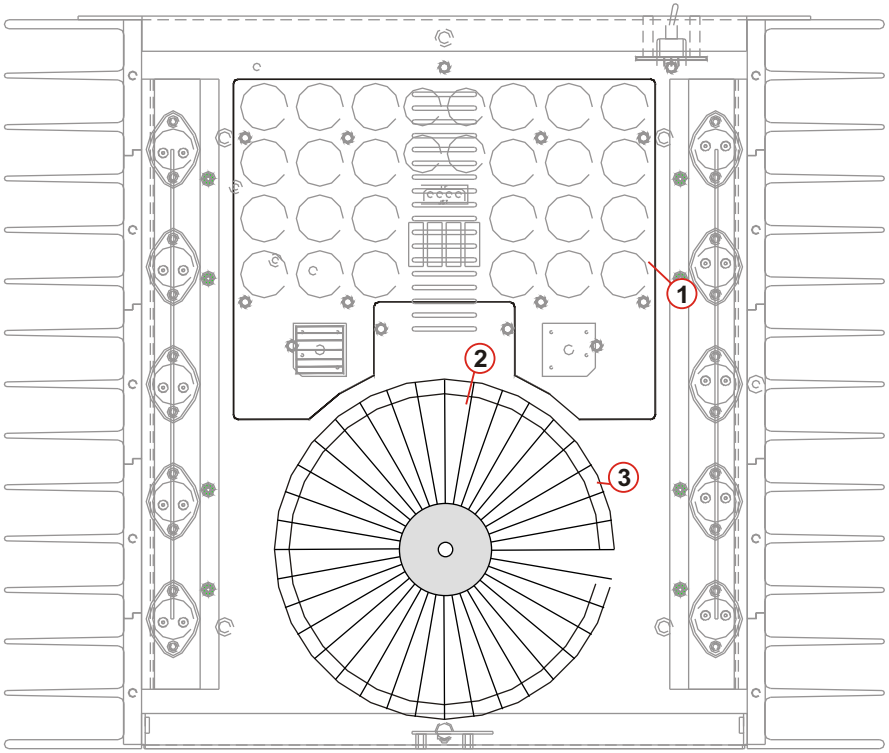
TOP VIEW



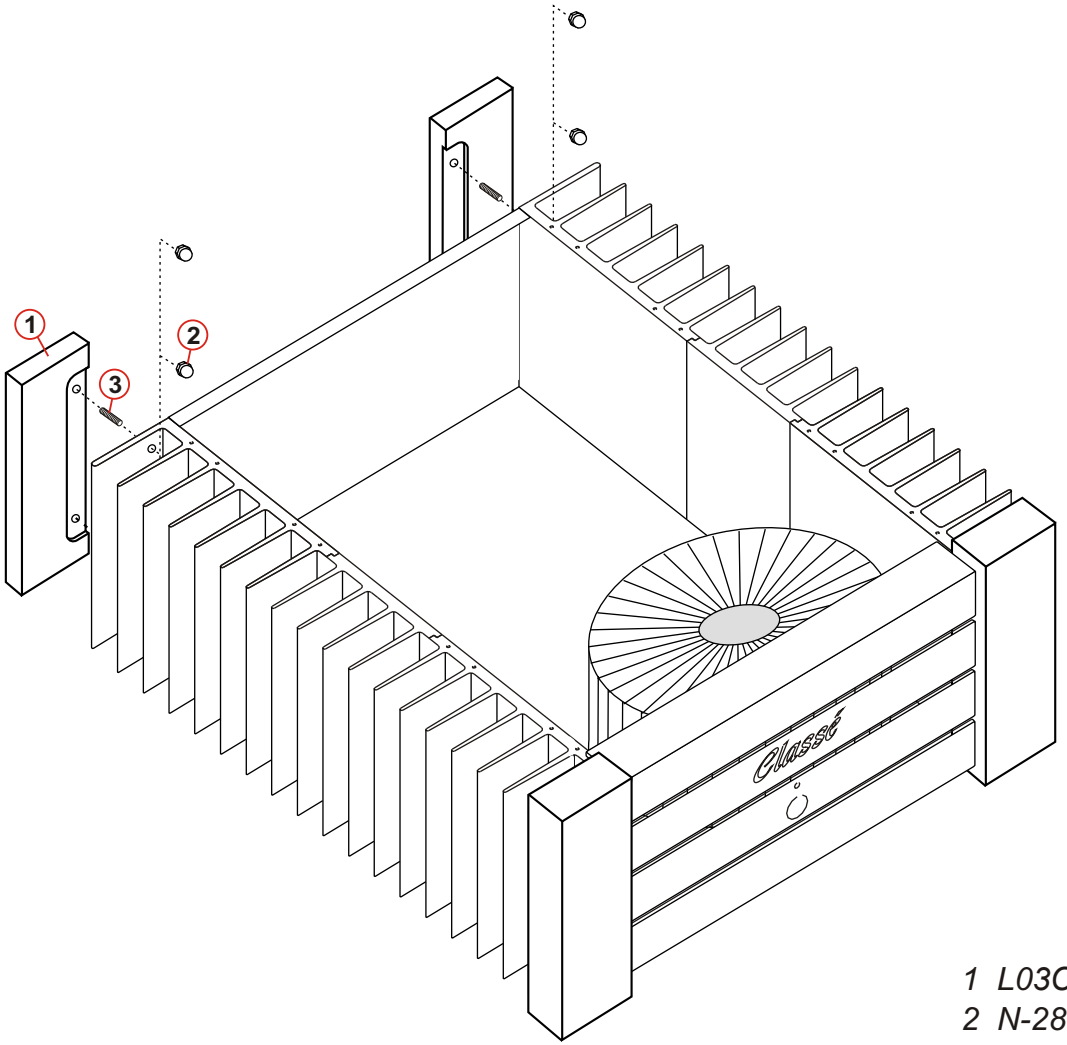
1 PLA CAPFR1
2 HDW #8 FLAT WASHER
3 BZO 8-32x3/4" BHCS
4 L031XR07



1 B035X
2 B032X
3 B037X
4 B01CX



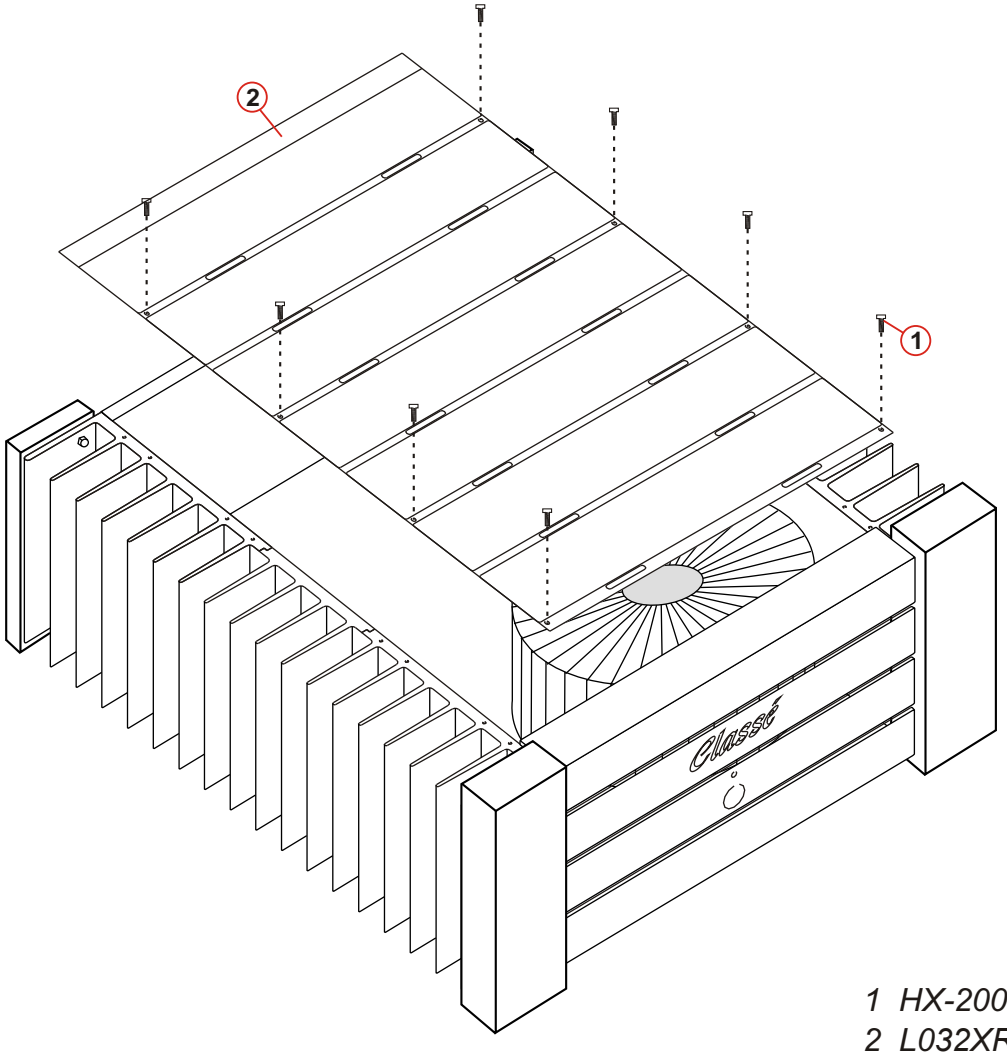
1 B036X
2 6689-X0-03
3 T-P 5.5



1 L03CXR00
2 N-280
3 SS-185

SHIPPING AREA - FINAL ASSY

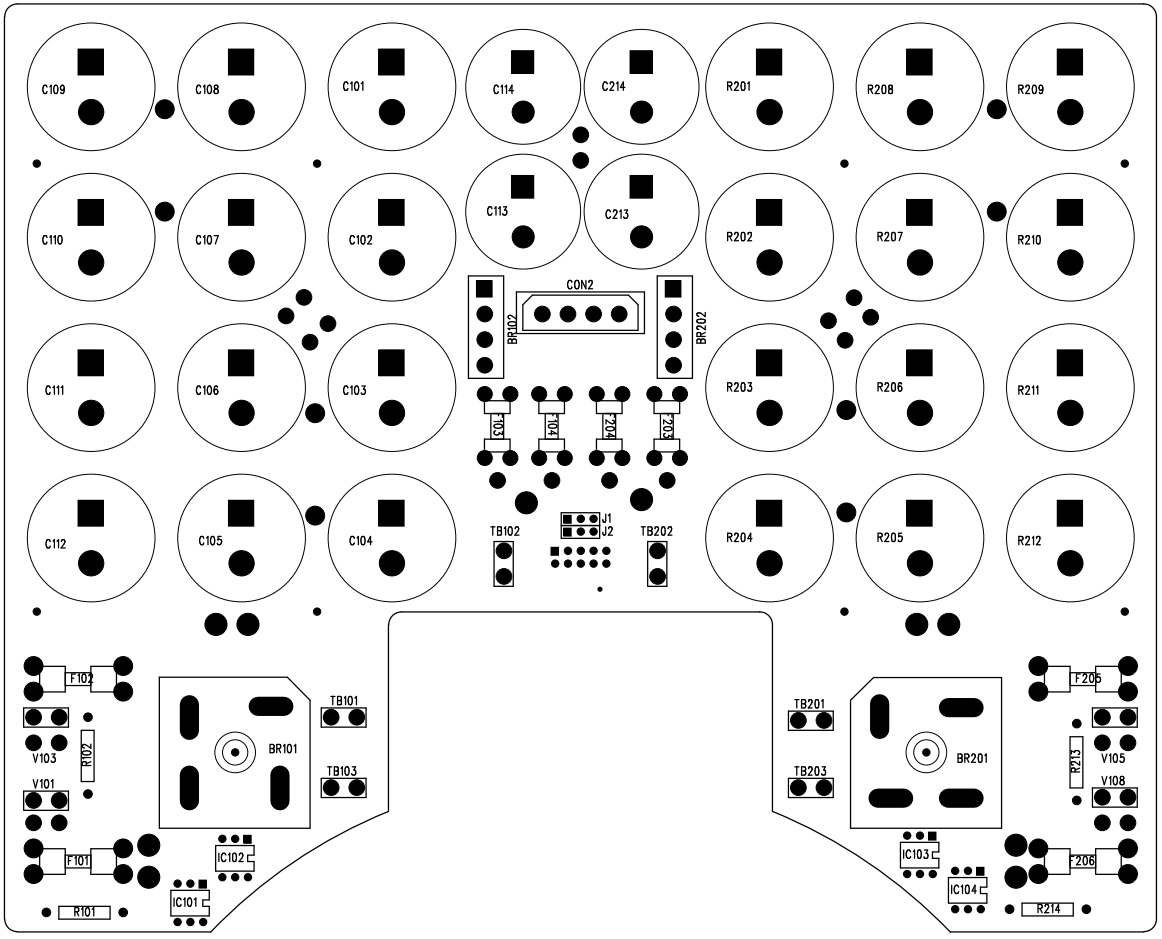
CA-201

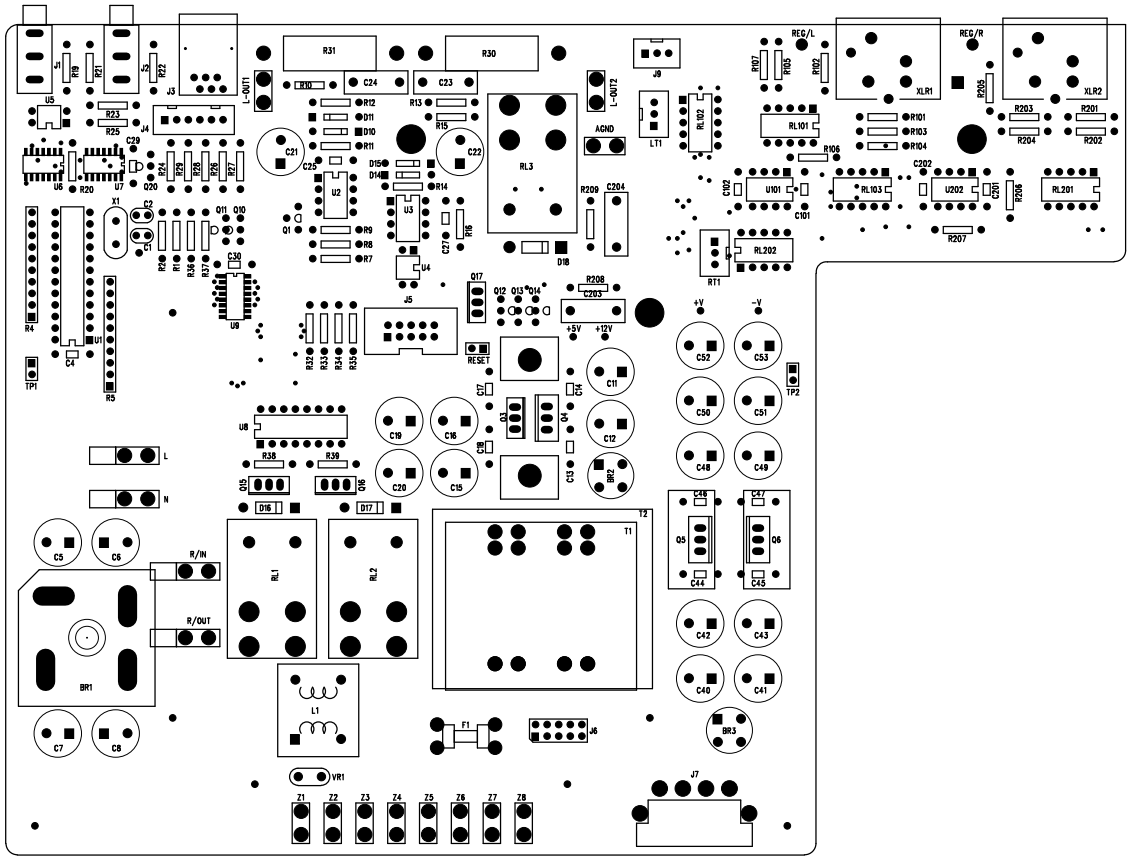


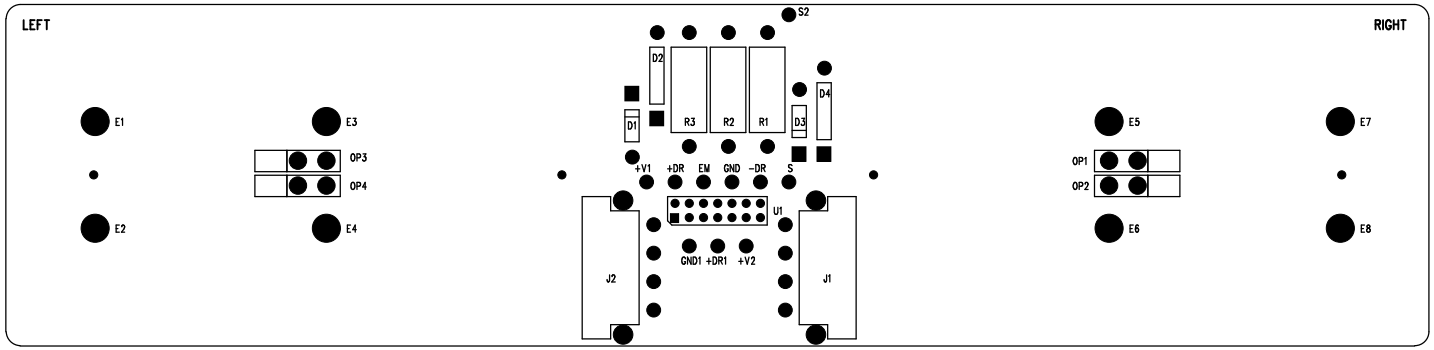
1 HX-2003
2 L032XR03

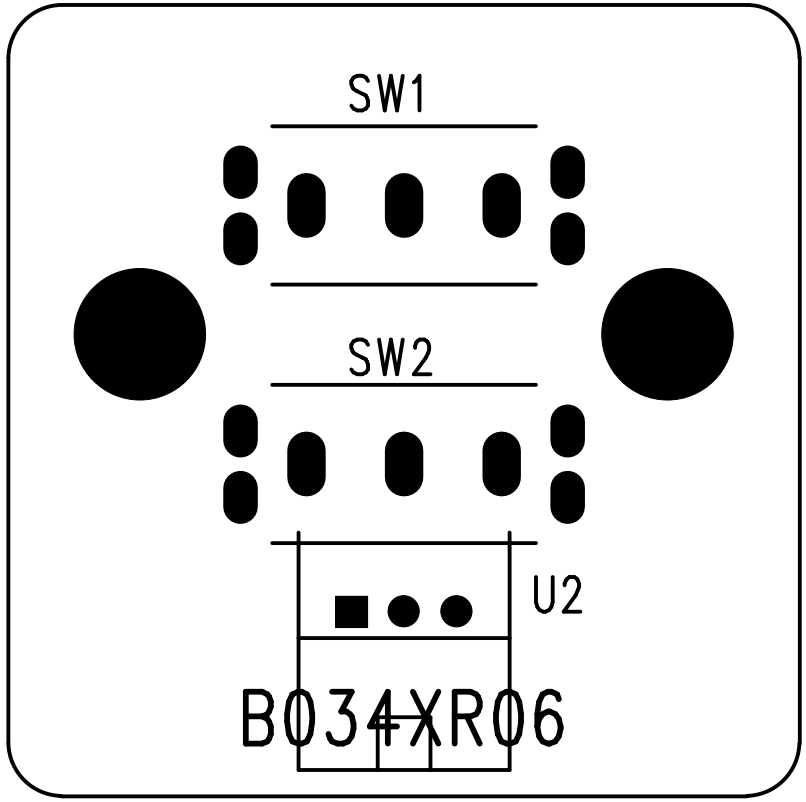
CA-201

PC BOARDS

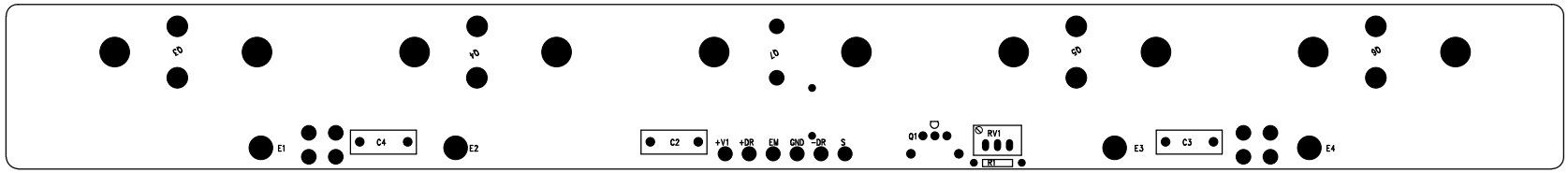

C109
C108
C101
C114
C214
R201
R208
R209
C110
C107
C102
C113
C213
R202
R207
R210
CON2
BR102
BR202
C111
C106
C103
F103
F104
F204
F203
R203
R206
R211
J1
J2
C112
C105
C104
TB102
TB202
R204
R205
R212
F102
TB101
BR101
TB103
V103
R102
V101
F101
IC102
IC101
R101
TB201
BR201
TB203
F205
V105
R213
V108
IC103
IC104
F206
R214

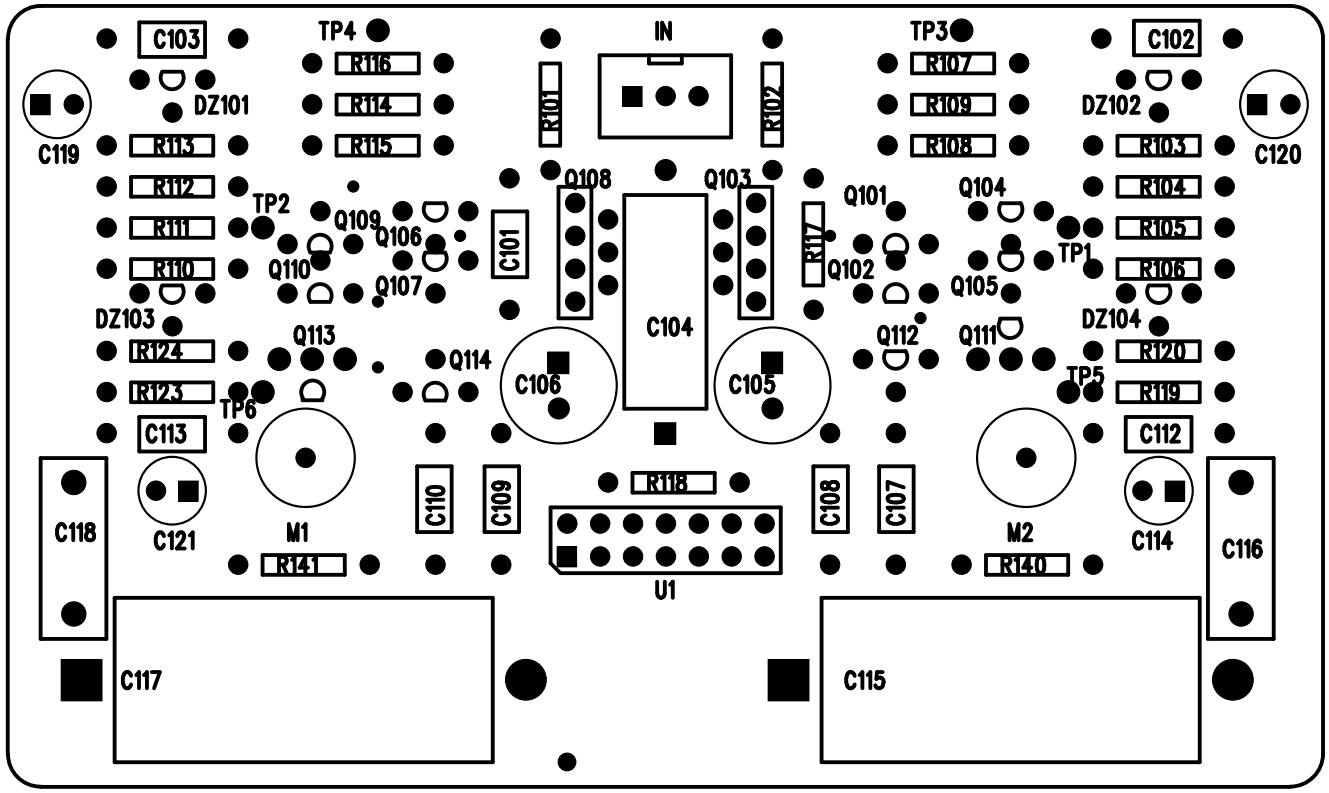

R31
R30
C24
C23
L-OUT1
L-OUT2
J9
REC/L
REC/R
XLR1
XLR2
R107
R105
R102
R205
R203
R201
R204
R202
R101
R103
R104
RL101
R106
AGND
LT1
RL102
C202
C102
U101
RL103
U202
C201
R206
RL201
C101
R207
RL202
RT1
R209
C204
R208
C203
D18
Q17
Q12
Q13
Q14
+V
-V
+5V
+12V
RESET
J5
C52
C53
C50
C51
C48
C49
C46
C47
C44
C45
Q5
Q6
C42
C43
C40
C41
BR3
J7
T1
T2
RL1
RL2
L1
F1
J6
VR1
BR1
C5
C6
C7
C8
R/IN
R/OUT
L
N
C19
C16
C20
C15
C12
C11
C10
C13
C17
C18
Q3
Q4
Q15
Q16
R38
R39
D16
D17
U8
TP1
TP2
U1
R5
R4
X1
C2
C1
Q11
Q10
Q1
U2
U3
U4
R9
R8
R7
R12
D11
D10
R11
D15
D14
R14
R13
R15
C21
C22
C25
RL3
R16
C27
R12
R29
R28
R27
Q20
U6
U7
R20
C29
R23
R25
J4
J3
R19
R21
J1
J2
R22
U5
C36
R24
R18
R36
R37
U9
R32
R33
R34
R35
Z1
Z2
Z3
Z4
Z5
Z6
Z7
Z8

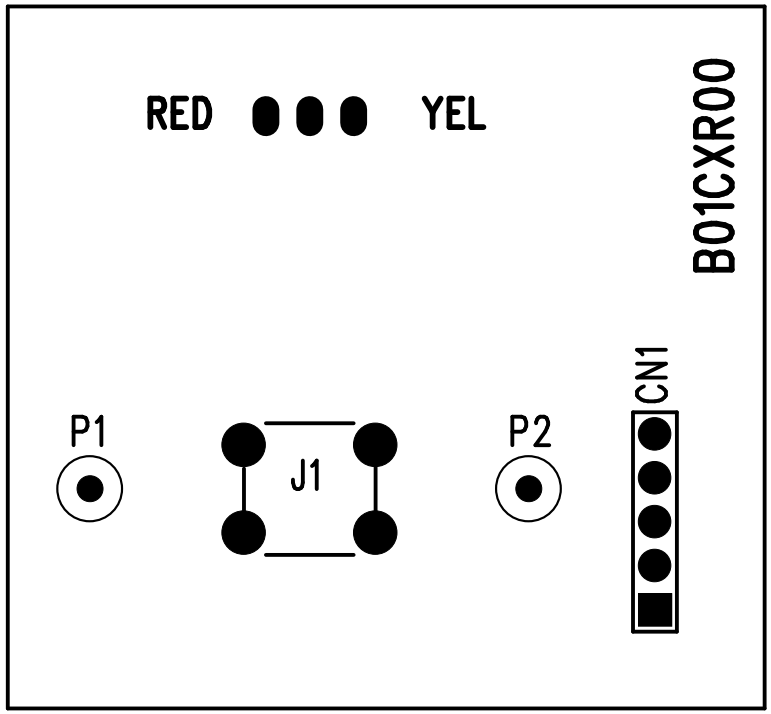

LEFT
RIGHT
S2
D2
D1
R3
R2
R1
D3
D4
E1
E2
E3
E4
OP3
OP4
+V1
+DR
EM
GND
-DR
S
U1
GND1
+DR1
+V2
J2
J1
E5
E6
E7
E8
OP1
OP2


SW1
SW2
U2
B034XR06

B032XR05 DEVICE (X2)




C103
TP4
IN
TP3
C102
R116
R107
DZ101
R101
R102
DZ102
C119
R114
R109
C120
R113
R115
R108
R103
Q108
Q103
Q101
Q104
R112
R104
TP2
Q109
Q106
C101
R117
TP1
R111
R105
Q110
Q102
Q105
R110
R106
Q107
DZ103
C104
DZ104
Q113
Q112
Q111
R124
R120
Q114
C106
C105
TP5
R123
R119
TP6
C113
C112
C118
C110
C109
R118
C108
C107
C116
C121
M1
M2
C114
R141
R140
U1
C117
C115


RED
YEL
B01CXR00
CN1
P1
J1
P2

CA-201

TESTING PROCEDURES

1. Check all mechanical and electronic components.
2. Check all wires position.
3. Connect the jumpers and/or wires for 120 volt.
4. Turn the bias trimpot all way down. (bias = o v)
5. Connect the unit in bypass mode.
6. Connect the unit with variable transformer.

1. Apply 10v A.C. from variable transformer and measure the rail and driver voltage. If this voltage is not ok then turn off the unit and the recheck the unit.
2. If the rail and driver voltage ok the increase the line voltage and check rail and driver voltage up to line voltage was 120v.
3. Then remove bypass mode.
4. Turn on unit and check the rails, drivers and offset voltages for all channels. Also check the sequence of relay clicking. NEXT 119
5. Adjust the bias and offset. (Some unit bias is fixed.)
6. Check the voltage for relays and other supply voltage.
7. Check protection circuit for all channels.
8. Check IR (in/out) and/or phone jack.
9. Connect the load and input signal. Check the output and measure the power with 4^ and 8^ load for all following condition:

   Regular stereo
   Regular mono
   Balance stereo
   Balance mono

10. In the end check bias + offset again.
11. Check noise.
12. Put the unit on burn-in bench.

1. Before final test unit was 4 days on burn-in-bench with music.
2. Take the unit from burn-in-bench to Q.C and play it immediately. Keep the line 120V A.C.
3. Check physically and check the components.
   -Check all capacitor and devices direction. Capacitor stand up right way i.e. check co-solder.
   -check any missing parts.
   -check all fuse sockets.
   -check main board tight up with screw and washer.
   -check any screw missing.
   -check balance lock working smoothly.
   -check all output transistors position with pad.
   -check main transistors position with pad.
   -check main transformer tight very well.
4. Adjust bias 26mV for every output devices for both channels. Wait 7 to 8 minutes after each adjustment. Also adjust offset to 0mV.
5. Measure rail and pre-driver voltage.
6. Measure A.C voltage for bridge.
7. Measure supply voltage for relays. +15V and 15V for both channels. +12V and 12V.
8. Measure reference voltage 8.1V on both channels.
9. Measure reference voltage for protection 78V.
10. After setting the bias, connect load and input signal. Check output signal. Check phase with input signal.
11. Measure frequency response, slew rate, gain, signal to noise ratio.
12. Check the output signal from 20Hz to 20KH with load in following combination. Also measure the output power.
    Regegur-stereo
    Balance-stereo
    Regegur-mono
    Balance-mono
13. Check phone-jack.
14. Check protection on both channels.
15. Check noise with speaker.
16. Put the jumpers and varistor for required A.C voltage.
17. Plug unit again and check rail and pre-driver voltage.

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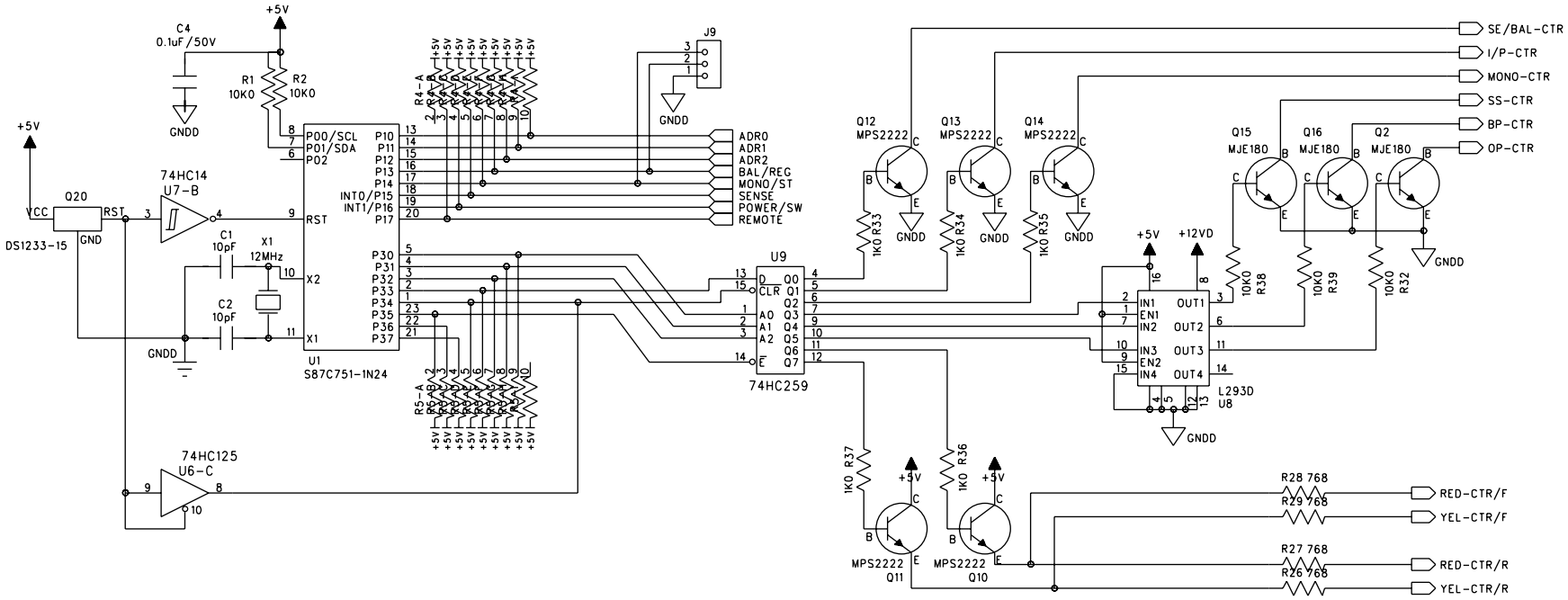
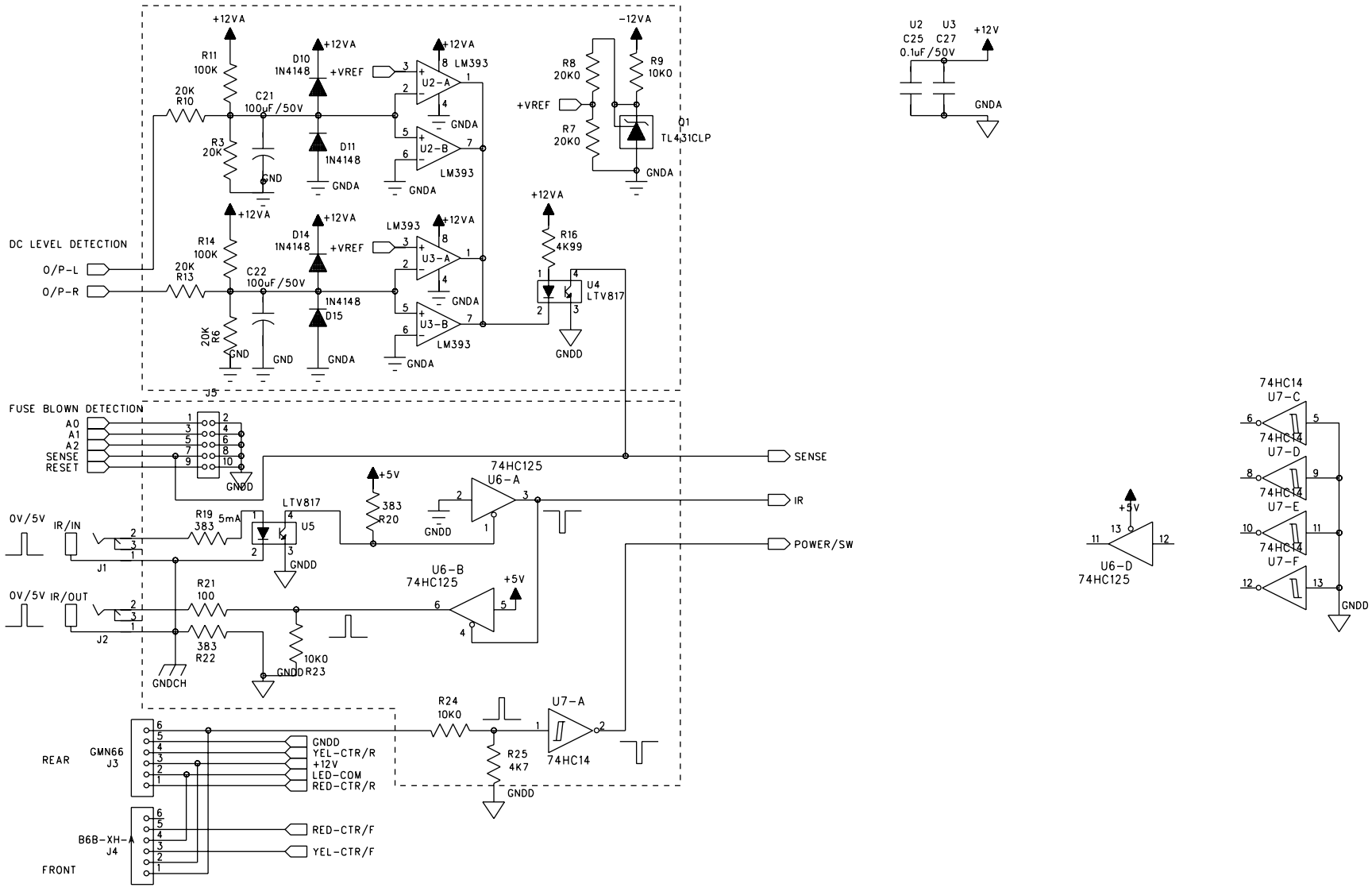
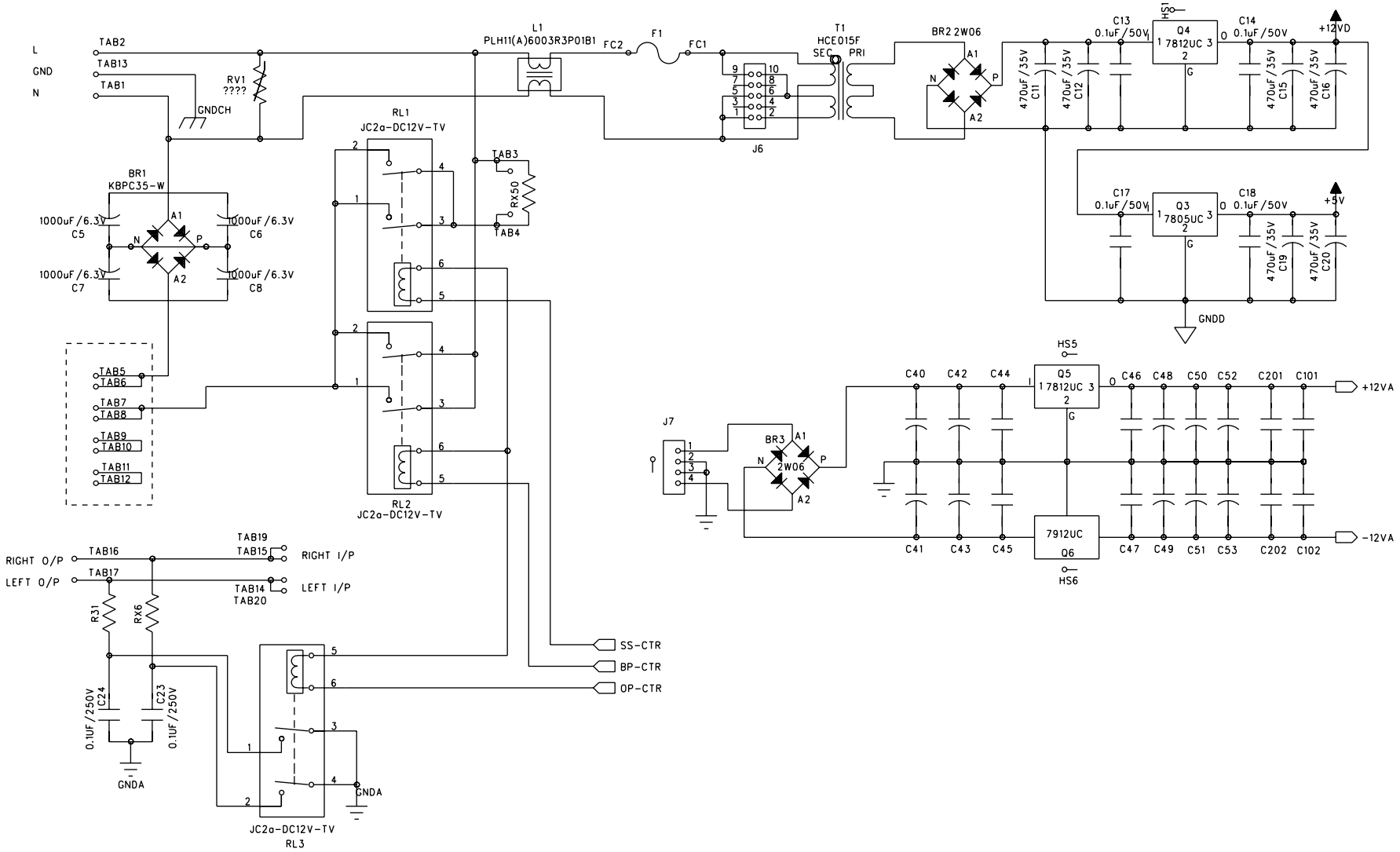
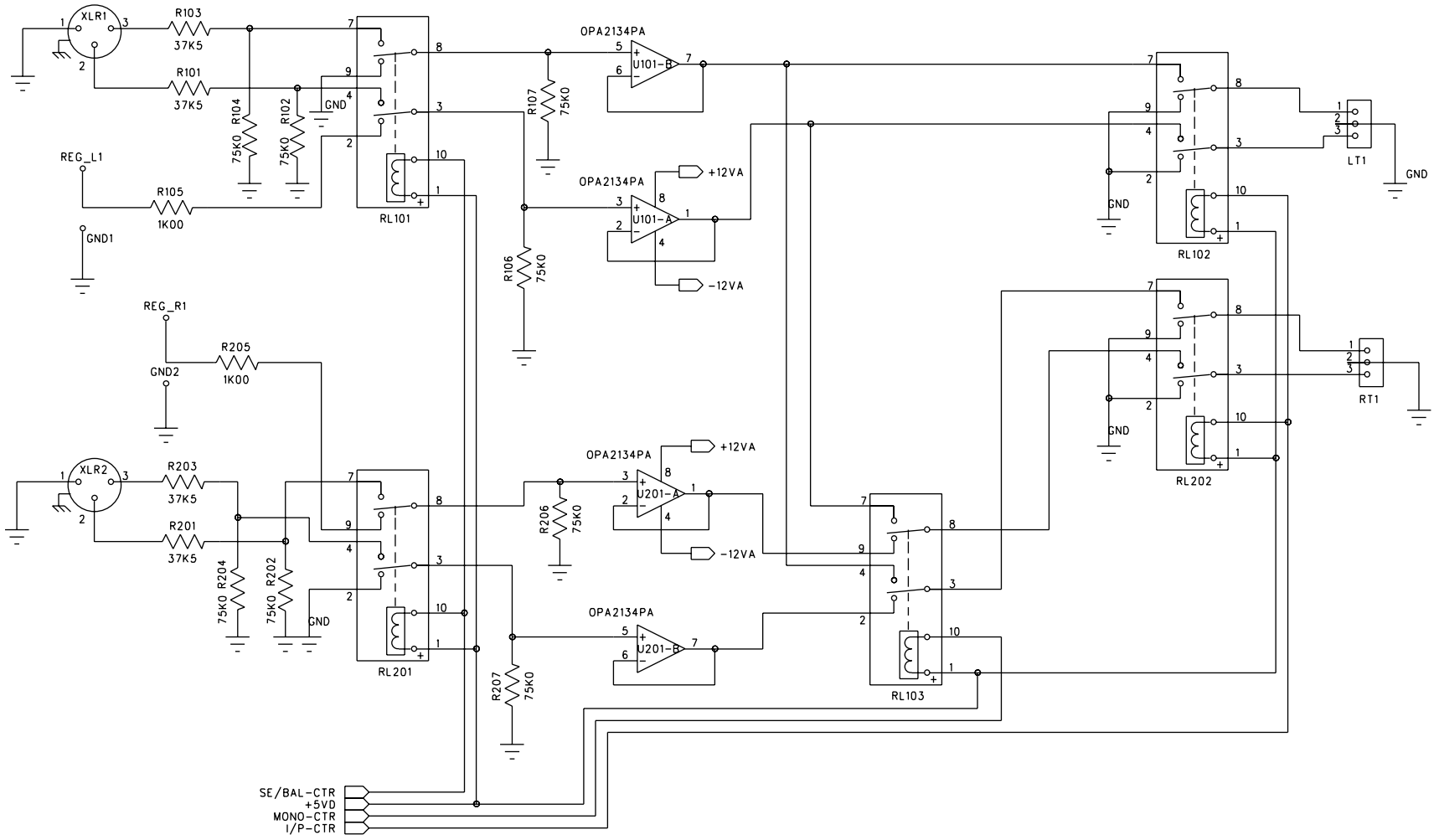
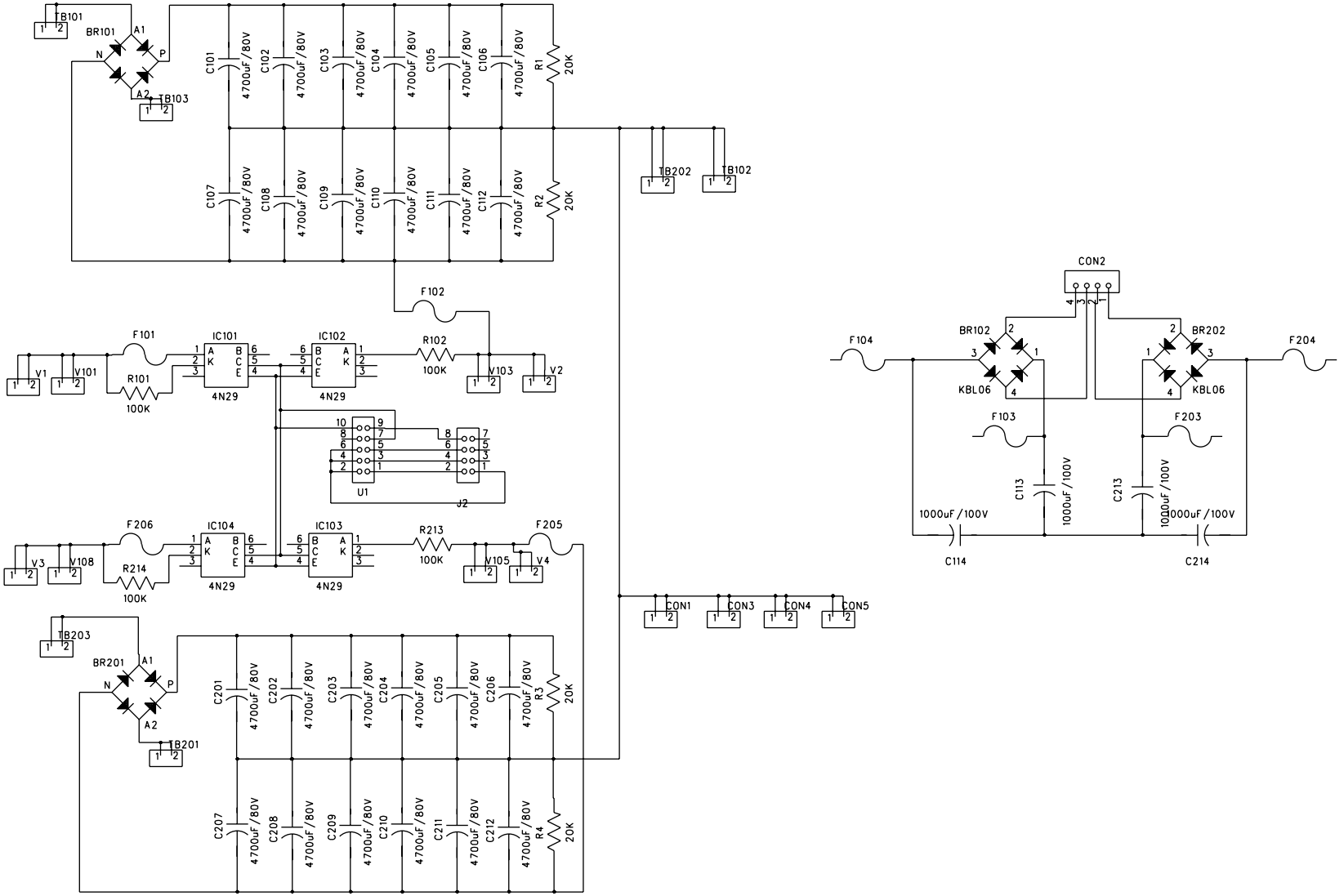
DIAGRAMS

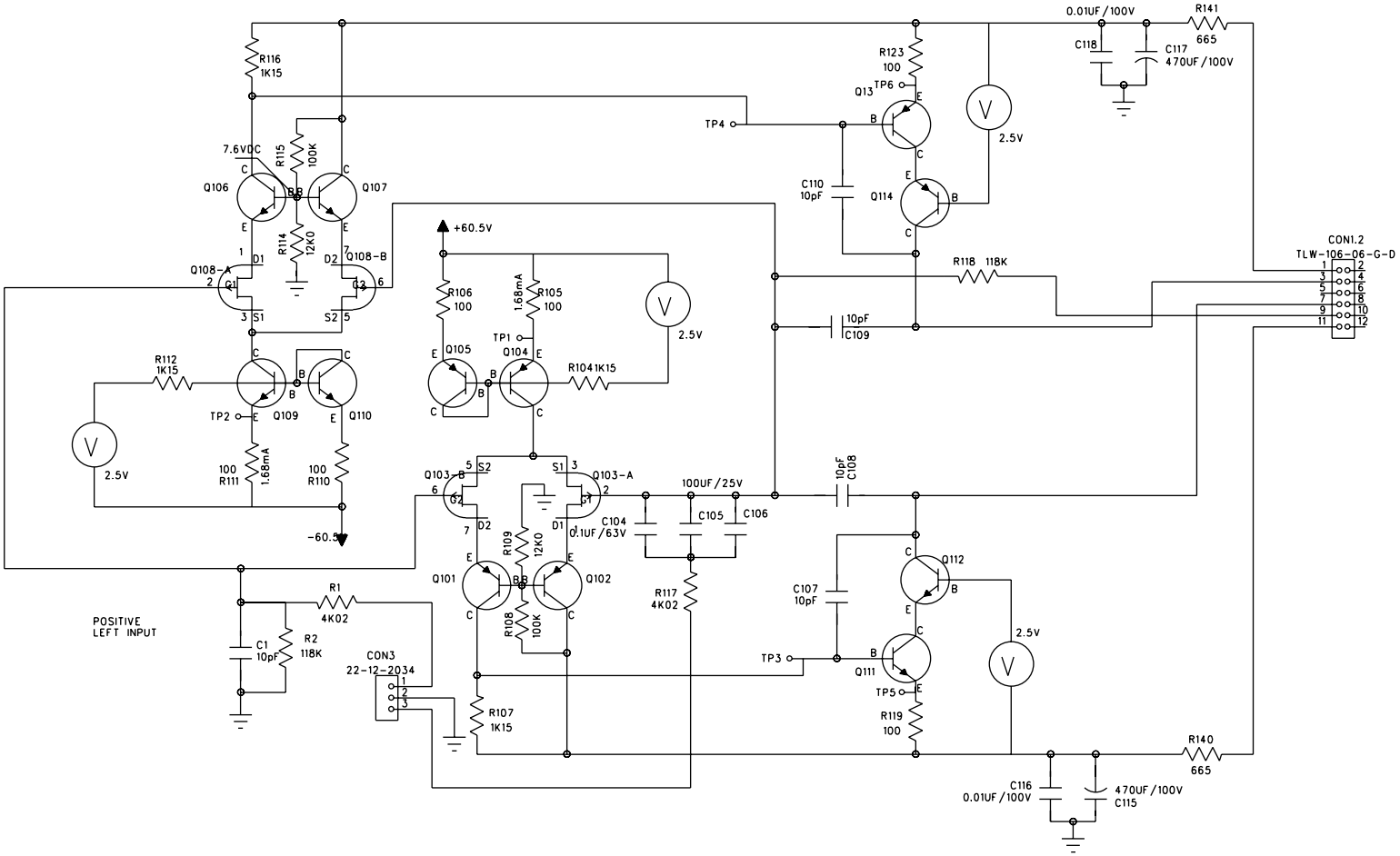

+5V
C4
0.1uF/50V
GNDD
R1
10KO
R2
10KO
74HC14
U7-B
Q20
DS1233-15
VCC
RST
GND
C1
10pF
X1
12MHz
C2
10pF
U1
S87C751-1N24
P00/SCL
P01/SDA
P02
RST
X2
X1
P10
P11
P12
P13
P14
INT0/P15
INT1/P16
P17
P30
P31
P32
P33
P34
P35
P36
P37
R4-A
R5-A
J9
ADR0
ADR1
ADR2
BAL/REG
MONO/ST
SENSE
POWER/SW
REMOTE
U9
74HC259
74HC125
U6-C
Q12
MPS2222
Q13
MPS2222
Q14
MPS2222
1KO R33
1KO R34
1KO R35
Q15
MJE180
Q16
MJE180
Q2
MJE180
10KO R38
10KO R39
10KO R32
+12VD
L293D
U8
1KO R37
1KO R36
MPS2222
Q11
MPS2222
Q10
R28 768
R29 768
R27 768
R26 768
SE/BAL-CTR
I/P-CTR
MONO-CTR
SS-CTR
BP-CTR
OP-CTR
RED-CTR/F
YEL-CTR/F
RED-CTR/R
YEL-CTR/R

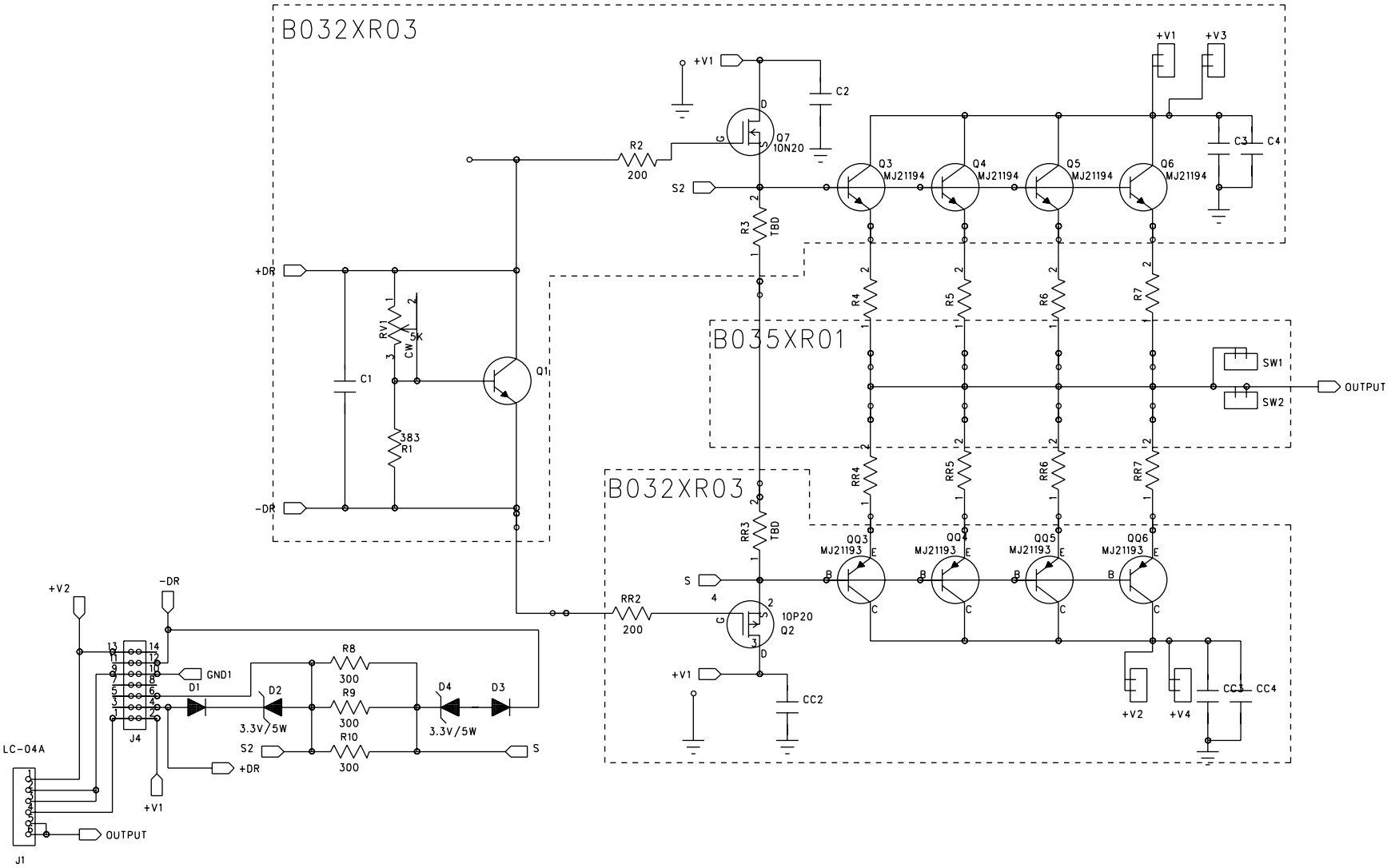

+12VA
R11
100K
20K
R10
C21
100uF/50V
R3
20K
GND
D10
1N4148
+VREF
D11
1N4148
GNDA
U2-A
U2-B
LM393
8 LM393
R8
20K0
R9
10K0
+VREF
R7
20K0
Q1
TL431CLP
-12VA
DC LEVEL DETECTION
O/P-L
O/P-R
R14
100K
20K
R13
C22
100uF/50V
R6
D14
1N4148
D15
U3-A
U3-B
R16
4K99
U4
LTV817
GNDD
J5
FUSE BLOWN DETECTION
A0
A1
A2
SENSE
RESET
74HC125
U6-A
U6-B
U6-D
+5V
LTV817
U5
R19
383
5mA
R20
383
R21
100
R22
383
R23
10K0
GNDCH
OV/5V
IR/IN
IR/OUT
J1
J2
SENSE
IR
POWER/SW
R24
10K0
R25
4K7
U7-A
74HC14
74HC14
U7-C
U7-D
U7-E
U7-F
REAR
GMN66
J3
GNDD
YEL-CTR/R
+12V
LED-COM
RED-CTR/R
B6B-XH-A
J4
FRONT
RED-CTR/F
YEL-CTR/F
U2
U3
C25
C27
0.1uF/50V
+12V
GNDA


L
GND
N
TAB2
TAB13
TAB1
RV1
????
GNDCH
L1
PLH11(A)6003R3P01B1
FC2
F1
FC1
T1
HCE015F
SEC
PRI
BR2 2W06
A1
A2
N
P
C13
0.1uF/50V
C14
0.1uF/50V
+12VD
HS1
Q4
7812UC
C11
C12
C15
C16
470uF/35V
J6
RL1
JC2a-DC12V-TV
TAB3
RX50
TAB4
BR1
KBPC35-W
1000uF/6.3V
C5
C6
C7
C8
C17
0.1uF/50V
C18
0.1uF/50V
+5V
Q3
7805UC
C19
C20
GNDD
TAB5
TAB6
TAB7
TAB8
TAB9
TAB10
TAB11
TAB12
RL2
JC2a-DC12V-TV
HS5
Q5
7812UC
C40
C42
C44
C46
C48
C50
C52
C201
C101
+12VA
J7
BR3
2W06
C41
C43
C45
7912UC
Q6
C47
C49
C51
C53
C202
C102
-12VA
HS6
TAB19
TAB15
RIGHT I/P
TAB16
RIGHT O/P
TAB17
LEFT O/P
TAB14
TAB20
LEFT I/P
R31
RX6
C24
C23
0.1UF/250V
GNDA
SS-CTR
BP-CTR
OP-CTR
JC2a-DC12V-TV
RL3


XLR1
R103
37K5
R101
37K5
R104
75KO
R102
75KO
GND
REG_L1
R105
1KOO
GND1
RL101
OPA2134PA
U101-B
R107
75KO
OPA2134PA
U101-A
+12VA
-12VA
R106
75KO
RL102
LT1
GND
REG_R1
R205
1KOO
GND2
XLR2
R203
37K5
R201
37K5
R204
75KO
R202
75KO
GND
RL201
OPA2134PA
U201-A
+12VA
-12VA
R206
75KO
OPA2134PA
U201-B
R207
75KO
RL202
RT1
RL103
SE/BAL-CTR
+5VD
MONO-CTR
I/P-CTR

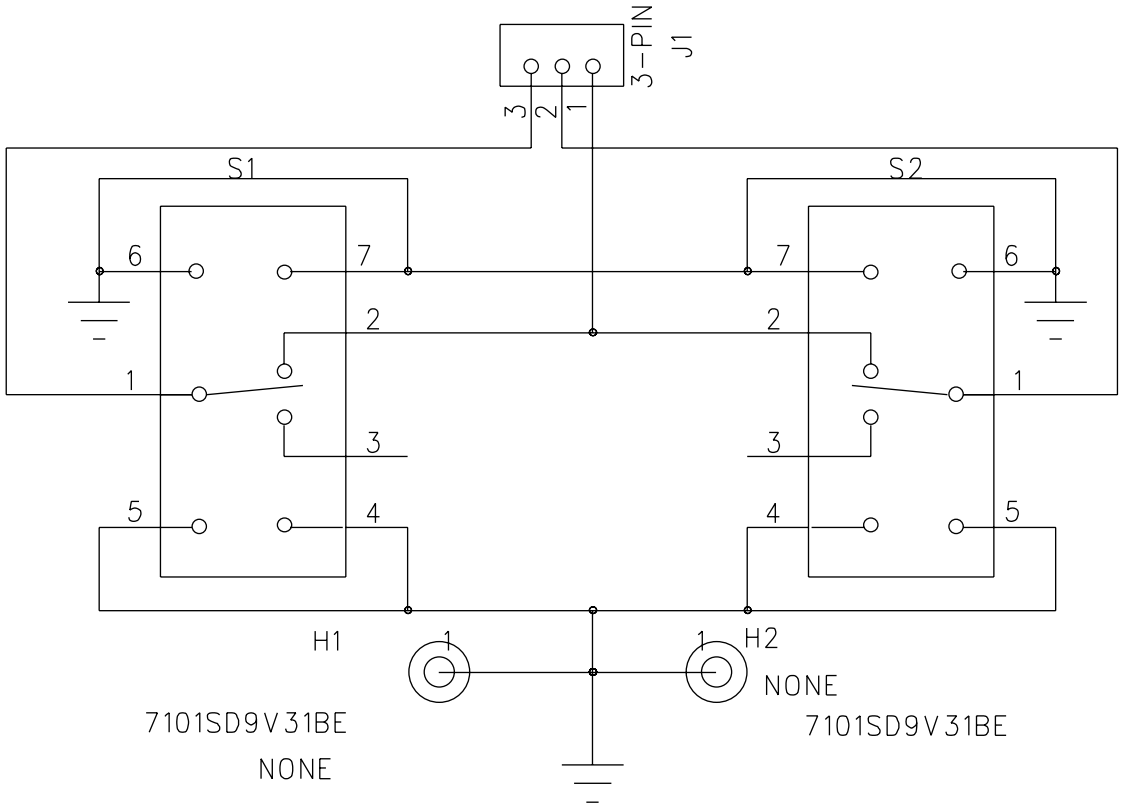

TB101
BR101
A1
N
P
A2
TB103
C101
C102
C103
C104
C105
C106
R1
20K
4700uF/80V
C107
C108
C109
C110
C111
C112
R2
TB202
TB102
F102
F101
IC101
IC102
R102
100K
V1
V101
R101
4N29
V103
V2
U1
J2
F206
IC104
IC103
R213
F205
V3
V108
R214
V105
V4
TB203
BR201
TB201
C201
C202
C203
C204
C205
C206
R3
C207
C208
C209
C210
C211
C212
R4
CON1
CON3
CON4
CON5
CON2
F104
BR102
BR202
KBL06
F204
F103
F203
C113
C213
1000uF/100V
C114
C214

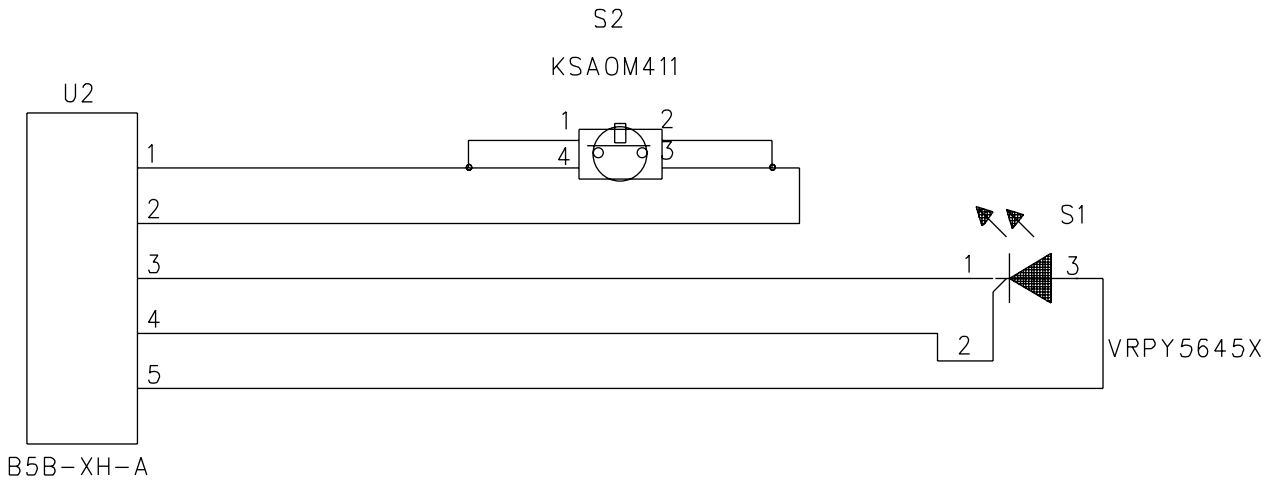

0.01UF/100V
R141
665
C118
C117
470UF/100V
R123
100
TP6
Q113
2.5V
TP4
C110
10pF
Q114
R116
1K15
7.6VDC
R115
100K
Q106
Q107
R114
12KO
Q108-A
Q108-B
+60.5V
R106
100
1.68mA
R105
100
TP1
Q105
Q104
R104 1K15
2.5V
R118 118K
CON1.2
TLW-106-06-G-D
10pF
C109
R112
1K15
TP2
Q109
Q110
100
R111
1.68mA
100
R110
-60.5V
100UF/25V
10pF
C108
Q103-B
Q103-A
C104
0.1UF/63V
C105
C106
R109
12KO
Q101
Q102
R117
4K02
C107
10pF
Q112
Q111
TP3
TP5
R119
100
2.5V
R140
665
C116
0.01UF/100V
470UF/100V
C115
POSITIVE
LEFT INPUT
R1
4K02
C1
10pF
R2
118K
CON3
22-12-2034
R108
100K
R107
1K15


B032XR03
+V1
C2
D
G
Q7
10N20
R2
200
S2
R3
TBD
+V1
+V3
Q3
MJ21194
Q4
MJ21194
Q5
MJ21194
Q6
MJ21194
C3
C4
+DR
-DR
RV1
CW
5K
C1
Q1
383
R1
R4
R5
R6
R7
B035XR01
SW1
SW2
OUTPUT
B032XR03
RR3
TBD
RR4
RR5
RR6
RR7
S
4
RR2
200
10P20
Q2
QQ3
MJ21193
QQ4
MJ21193
QQ5
MJ21193
QQ6
MJ21193
+V1
CC2
+V2
+V4
CC3
CC4
+V2
-DR
GND1
D1
D2
3.3V/5W
R8
300
R9
300
R10
300
D4
D3
3.3V/5W
S2
+DR
S
J4
LC-04A
+V1
OUTPUT
J1

TOGGLE SWITCH - B034XR06

CA-201




S2
KSAOM411
U2
1
2
3
4
5
1
2
4
3
S1
1
3
2
VRPY5645X
B5B-XH-A